

## Network Lab: Making a Network Cable

This activity is designed to help students learn to make network cable, specifically Category 5 UTP.

You need to know that there are 2 wiring standards: EIA/TIA 568A and EIA/TIA 568B. It does not really matter which standard you use as long as all cables that you make adhere to one standard or the other. It has become industry standard to use EIA/TIA 568B. Therefore, we will use EIA/TIA 568B for our cables.

### EIA/TIA 568B

White/orange  
Orange  
White/green  
Blue  
White/blue  
Green  
White/brown  
Brown

### EIA/TIA 568A

White/green  
Green  
White/orange  
Blue  
White/blue  
Orange  
White/brown  
Brown

**Straight-through** – used to connect a workstation to a hub or switch. To make this type of cable, both ends of the cable are made exactly the same way using the EIA/TIA 568B standard with the white/orange wire on the left-hand side and the tab of the RJ-45 connector pointing toward the floor.

### Cable Making Instructions

1. We will be making a straight-through cable.
2. Obtain a segment of cable.
3. Use wire strippers to strip the protective plastic coating off of the cable about 1 ½ inches back from the end. Be careful not to cut into the wires inside.
4. There is a small string-like piece inside the cable that is used for support of the wire while you are running it through buildings to ensure that the wires don't get stretched. Cut this string-like piece off.
5. Examine the wires. You should have 4 pairs of twisted wires.
6. Untwist the wires to the point at which you stripped the cable back.
7. Straighten the wires by putting them in between your fingers and applying a slight pulling pressure to them. Continue to do this until the wires are straight.
8. Reorder the wires so that they are configured according to the wiring standard that you are using. (In this case, EIA/TIA 568B.)
9. When all the wires are in the correct order and they are all straight, cut them so that they are approximately 5/8" long. You might hold up an RJ-45 jack to the end to see exactly how much needs to be cut off.
10. Make sure that all wires are still configured in the correct order.
11. Insert wires into an RJ-45 jack with the tab on the jack towards the floor and the white/orange wire to the left.
12. Visually inspect the jack on the end to see the copper from the wires shining through the plug.
13. Only when everything is right should you crimp the RJ-45 jack onto the cable.
14. Finish the other end of the cable the same way following steps 2-13.
15. Test the cable.